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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,713	11/30/2001	Heung-Sik Yoon	671-8 (P9962)	7204

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EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/998,713

Applicant(s)

YOON, HEUNG-SIK

Examiner

TUAN A PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 5 is objected to because of the following informalities: Examiner assumed claim 5 is disclosed the second reception path of a second receiver, not the first reception path of the first receiver. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vuorio et al. (U.S. Patent No.: 6,535,748, hereinafter, "Vuorio") in view of Tran et al. (U.S. Patent 6,665,284, hereinafter, "Tran").

**Regarding claim 1**, Vuorio teaches a system for improving performance in wireless terminal using diversity techniques, (see figure 7) comprising: a first receiver for signal transmission and reception including a first antenna (see figure 7, first receiver with antenna 2, RX path with F2, TX path with Fa and Fb, col.12, ln.1-15), a first reception path through a duplexer (see figure 7, first RX path with F2, col.12, ln.1-15), a first transmission path through said duplexer (see figure 7, first TX path Fa, duplexer 6, col.11, ln.57-67), a second transmission path bypassing said duplexer (see figure 7, second TX path with Fb), and a transmission switch for switching between said first and second transmission paths (see figure 7, switch 72, switch 74, col.11, ln.57-67); and a second receiver for receiving data including a second antenna and a second reception path (see figure 7, second RX with Fb, antenna 30, col.11, ln.45-67).

It should be noticed that Vuorio does not clearly teach a HDR in wireless system. However, Tran teaches such feature (see figure 2, col.4, ln.1-12) for a purpose of transmitting and receiving in a high speed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a HDR in wireless system, as taught by Tran, into view of Vuorio in order to support both voice and data in a communication system.

**Regarding claim 2**, Vuorio further teaches a system for improving performance in an HDR (High Data Rate) wireless terminal, wherein the first transmission path comprises: a multiplier for spreading a transmission signal; an RF BPF (Radio Frequency Band Pass Filter); a driver; a BPF; and a power amplifier for amplifying the transmission signal, connected in series and transmitting the transmission signal from the first antenna through the duplexer (see figure 7, multiplier 18, power amplifier 22). Vuorio clearly teach a general power amplifier block. However, one skill in the art should know that the power amplifier should includes a RF BPF, driver, and BPF for amplifier the signal before transmit.

**Regarding claim 3**, Vuorio further teaches a system for improving performance in an HDR (High Data Rate) wireless terminal, wherein the second transmission path comprises: a multiplier for spreading a transmission signal; an RF BPF (Radio Frequency Band Pass Filter); a driver; a BPF; and a power amplifier for amplifying the transmission signal, connected in series and transmitting the transmission signal from the first antenna through the duplexer (see figure 7, multiplier 18, power amplifier 22). Vuorio clearly teach a general power amplifier block. However, one skill in the art should know that the power amplifier should includes a RF BPF, driver, and BPF for amplifier the signal before transmit.

**Regarding claims 10 and 13**, Vuorio teaches a method for improving performance in wireless terminal using diversity techniques, including a first receiver for signal transmission and reception including a first antenna (see figure 7, first receiver with antenna 2, RX path with F2, TX path with Fa and Fb, col.12, ln.1-15), a first

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reception path through a duplexer (see figure 7, first RX path with F2, col.12, ln.1-15), a first transmission path through said duplexer (see figure 7, first TX path Fa, duplexer 6, col.11, ln.57-67), a second transmission path bypassing said duplexer (see figure 7, second TX path with Fb), and a transmission switch for switching between said first and second transmission paths (see figure 7, switch 72, switch 74, col.11, ln.57-67); and a second receiver for receiving data including a second antenna and a second reception path (see figure 7, second RX with Fb, antenna 30, col.11, ln.45-67), the method comprising: determining whether an HDR transmission is occurring; positioning the transmission switch to utilize the first transmission path in the first receiver (see figure 7, first transmission path the switch 72 and 74 are at a first position), and receiving signals by commonly utilizing the first and second reception paths when it is determined that an HDR transmission is occurring (see figure 7, first reception path with f2, second reception path at fb); and positioning the transmission switch to utilize the second transmission path bypassing the duplexer in the first receiver (see figure 7, second transmission path with fb, switch 72 and 74 are at second position to bypass the duplexer), and receiving signals by utilizing only the second reception path in the second receiver when it is determined that an HDR transmission is not occurring (see figure 7, second receiver with antenna 30, second reception path with f2).

It should be noticed that Vuorio does not clearly teach a HDR in wireless system. However, Tran teaches such feature (see figure 2, col.4, ln.1-12) for a purpose of transmitting and receiving in a high speed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a HDR in wireless system, as taught by Tran, into view of Vuorio in order to support both voice and data in a communication system.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vuorio et al. (U.S. Patent No.: 6,535,748, hereinafter, "Vuorio") in view of Tran et al. (U.S. Patent 6,665,284, hereinafter, "Tran") as applied to claim 1 above, and further in view of Peterzell (Pub. No.: US 2002/0123319).

**Regarding claims 4-5**, Vuorio and Tran, in combination, fails to clearly teach a system for improving performance in an HDR (High Data Rate) wireless terminal, wherein the first and second reception path comprises: a low noise amplifier for amplifying a received signal; a BPF; a multiplier; and an IF BPF, connected in series, and receiving the received signal from the first antenna through the duplexer. However, Peterzell teaches such features (see figure 3, LNA 30, BPF 40, mixer 60, IF BPF 60, after direct down conversion the RF signal will converted into IF Signal or baseband signal. Examiner assumed that the RF BPF is a IF BPF) for a purpose of converting to IF signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of teach a system for improving performance in an HDR (High Data Rate) wireless terminal, wherein the first and second reception path comprises: a low noise amplifier for amplifying a received signal;

a BPF; a multiplier; and an IF BPF, connected in series, and receiving the received signal from the first antenna through the duplexer, as taught by Peterzell, into view of Vuorio and Tran in order to support both voice and data in a communication system.

5. Claims 6-8, 11-12, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vuorio et al. (U.S. Patent No.: 6,535,748, hereinafter, "Vuorio") in view of Tran et al. (U.S. Patent 6,665,284, hereinafter, "Tran") as applied to claims 1, 10, and 13 above, and further in view of Jager (U.S. Patent No.: 6,330,433).

**Regarding claims 6, 12, and 15**, Vuorio and Tran, in combination, fails to clearly teach a microprocessor for controlling the transmission switch. However, Jager teaches such feature (see figure 3, diversity switch control 330, col.7, ln.4-8) for a purpose switching between two modes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a microprocessor for controlling the transmission switch, as taught by Jager, into view of Vuorio and Tran in order to transmit or receive different mode.

**Regarding claims 7, 11, and 14**, Tran further teaches a system for improving performance in an HDR (High Data Rate) wireless terminal, further comprising a microprocessor for determining whether an HDR transmission is occurring (see figure 2, hybrid baseband processor 92, col.8, ln.1-49).

**Regarding claim 8**, Jager further teach antennas are helical antennas (see col.3, ln.31-34).



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6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vuorio et al. (U.S. Patent No.: 6,535,748, hereinafter, "Vuorio") in view of Tran et al. (U.S. Patent 6,665,284, hereinafter, "Tran") as applied to claim 1 above, and further in view of McEwan (U.S. Patent No.: 6,191,724).

**Regarding claim 9**, Vuorio and Tran, in combination, fails to clearly teach a monopole antenna. However, McEwan teaches such feature (see col.11, ln.58-60) for transmitting and receiving the signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of monopole antenna, as taught by McEwan, into view of Vuorio and Tran in order to transmit and receive the RF signals in communication device.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Atokawa et al. (U.S. Patent No. 6,697,605), Martin et al. (U.S. Patent No. 5,960,039), and Yamaura (U.S. Patent No. 5,809,405) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method with reduces insertion loss comprising a single switching mean and plurality of antenna duplexers each duplexer having a different frequency band.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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Art Unit 2643  
January 15, 2005  
Examiner

Tuan Pham



HUYEN LE  
PRIMARY EXAMINER